

Listing and Amendments to the Claims

1. (Currently amended) A receiver comprising:

a down converter for providing a received signal; and

a demodulator having at least two demodulation modes for demodulating the received signal, wherein one demodulation mode is hierarchical demodulation and another demodulation mode is layered demodulation, and wherein the demodulator comprises

an upper layer demodulator for processing the received signal to provide a demodulated upper layer signal;

an upper layer decoder for decoding the demodulated upper layer signal to provide a decoded upper layer signal;

an upper layer remodulator/reencoder responsive to the decoded upper layer signal for providing a reconstructed modulated upper layer signal;

a combiner for combining the received signal with the reconstructed modulated upper layer signal such that an upper layer signal component of the received signal is substantially reduced therefrom to provide a received lower layer signal;

a lower layer demodulator for processing the received lower layer signal to provide a demodulated lower layer signal;

a selector for providing a lower layer signal derived from either the demodulated lower layer signal or the demodulated upper layer signal; and

a lower layer decoder for decoding the lower layer signal to provide a decoded lower layer signal.

2. (Original) The receiver of claim 1, wherein the demodulator is responsive to a demodulation mode signal that specifies which one of the number of demodulation modes is performed by the demodulator.

Cancel claim 3.

4. (Currently amended) The receiver of claim 3~~1~~, wherein the selector is responsive to a demodulation mode signal for selecting either the demodulated lower layer signal or the demodulated upper layer signal for use in deriving the lower layer signal.

5. (Original) The receiver of claim 4, wherein the selector is responsive to the demodulation mode signal for selecting one of a number of log-likelihood ratio (LLR) look-up tables for use in deriving the lower layer signal.

6. (Currently amended) The receiver of claim 3~~1~~, further including an equalizer deposited between the received signal and the combiner for equalizing the received signal.

7. (Currently amended) A receiver comprising:
a down converter for providing a received signal; and
a demodulator having at least two demodulation modes for demodulating the
received signal, wherein one demodulation mode is hierarchical demodulation and
another demodulation mode is layered demodulation.~~The receiver of claim 1~~ wherein the demodulator comprises:

an upper layer demodulator for processing the received signal to provide a demodulated upper layer signal;

an upper layer decoder for decoding the demodulated upper layer signal to provide a decoded upper layer signal;

an upper layer remodulator/reencoder responsive to the decoded upper layer signal for providing a reconstructed modulated upper layer signal and a reconstructed encoded upper layer signal;

a combiner for combining the received signal with the reconstructed modulated upper layer signal such that an upper layer signal component of the received signal is substantially reduced therefrom to provide a received lower layer signal;

a combiner for combining the demodulated upper layer signal and the reconstructed encoded upper layer signal such that an upper layer symbol component of the demodulated upper layer signal is substantially reduced to provide a first demodulated lower layer signal;

a lower layer demodulator for processing the received lower layer signal to provide a second demodulated lower layer signal;

a selector for providing a lower layer signal derived from either the first demodulated lower layer signal or the second demodulated lower layer signal; and

a lower layer decoder for decoding the lower layer signal to provide a decoded lower layer signal.

8. (Original) The receiver of claim 7, wherein the selector is responsive to a demodulation mode signal for selecting either the demodulated lower layer signal or the demodulated upper layer signal for use in deriving the lower layer signal.

9. (Original) The receiver of claim 8, wherein the selector further includes a soft input generator for converting the selected signal into soft input data, which is then provided as the lower layer signal.

10. (Original) The receiver of claim 9, wherein the soft input generator is a log-likelihood ratio generator.

11. (Currently amended) The receiver of claim 7, further including an equalizer deposited between the received signal and the combiner for combining the received signal, for equalizing the received signal.

Cancel claim 12.

Cancel claim 13.

Cancel claim 14.

15. (Currently amended) A method for use in a receiver, the method comprising:

receiving a signal;

selecting one of a number of demodulation modes, wherein at least two of the number of demodulation modes are a hierarchical demodulation mode and a layered demodulation mode; and

demodulating the received signal in accordance with the selected demodulation mode;

wherein the demodulating step includes the steps of:

demodulating the received signal to provide a demodulated upper layer signal and a demodulated lower layer signal;

decoding the demodulated upper layer signal to provide a decoded upper layer signal;

selecting, as a function of the selected demodulation mode, either the demodulated lower layer signal or the demodulated upper layer signal for providing a lower layer signal, wherein the demodulated lower layer signal is selected when the demodulation mode is the layered demodulation mode and the demodulated upper layer signal is selected when the demodulation mode is the hierarchical demodulation mode; and

decoding the lower layer signal to provide a decoded lower layer signal.

Cancel claim 16.

17. (Original) The method of claim 15, wherein the selecting step includes the steps of:

selecting a log-likelihood ratio (LLR) look-up table (LUT) as a function of the demodulation mode signal; and

generating log-likelihood ratios from the LLR LUT as a function of the selected signal to provide the lower layer signal.

18. (Currently amended) A method for use in a receiver, the method comprising:

receiving a signal;

selecting one of a number of demodulation modes, wherein at least two of the number of demodulation modes are a hierarchical demodulation mode and a layered demodulation mode; and

demodulating the received signal in accordance with the selected demodulation mode;

~~The method of claim 15,~~

wherein the demodulating step includes the steps of:

demodulating the received signal to provide a demodulated upper layer signal and a demodulated lower layer signal;

decoding the demodulated upper layer signal to provide a decoded upper layer signal;

reencoding the decoded upper layer signal to provide a reencoded upper layer signal;

subtracting the reencoded upper layer signal from the demodulated upper layer signal to provide an encoded lower layer signal;

selecting, as a function of the selected demodulation mode, either the demodulated lower layer signal or the encoded lower layer signal for providing a lower layer signal, wherein the demodulated lower layer signal is selected ~~if-when~~ the demodulation mode is the layered demodulation mode and the encoded lower layer signal is selected ~~if-when~~ the demodulation mode is the hierarchical demodulation mode; and

decoding the lower layer signal to provide a decoded lower layer signal.

19. (Original) The method of claim 18, wherein the selecting step includes the step of generating log-likelihood ratios from the selected signal for providing the lower layer signal.

Cancel claim 20.

Cancel claim 21.